

SUMMARY OF THE INVENTION

Therefore, what is needed is a system and/or method that can be used to select and control devices in a digital home network system such as an IEEE 1394 network. In addition, what is needed is a system and/or method that can satisfy the above need and that allows a user to select a device (e.g., a source device) to provide an input signal to another device (e.g., a sink device), and that also allows a user to specify what output plug is to be used by the source device. What is also needed is a system and/or method that can satisfy the above needs and that can reduce the processing and memory resources needed for the controller device in a digital home network, and that can also reduce the load placed on the available network bandwidth. In addition, what is needed is a system and/or method that can satisfy the above needs and that is user-friendly.

The present invention provides a method and system for selecting and controlling devices on a digital home network, in particular a network compliant with IEEE 1394. The embodiments of the present invention described herein are focused on moving particular aspects of the process for connecting target devices from the controller to the target devices. In one embodiment, instead of retrieving connection information describing, for example, the number and types of plugs, then processing and storing this information, the controller device requests that the target device connect with the next possible connection, and then interrogates certain state variables that identify the types of plugs

available. A user, via the controller, can then select source and sink devices based on the information read from the target devices by the controller.

Thus, the present invention reduces the amount of information that needs to be provided by the target devices to the controller. Accordingly, the processing and memory resources required by the controller can be reduced, reducing the complexity of the controller and increasing its user-friendliness. Furthermore, the load placed on the available bandwidth of the serial bus can be reduced. These and other objects and advantages of the present invention will no doubt become obvious to those of ordinary skill in the art after having read the following detailed description of the preferred embodiments which are illustrated in the various drawing figures.

In one embodiment, an input-select button is used to select a device (a source device) to provide an input signal to another device (a sink device) on the home network. In another embodiment, an output-select button is used to specify which output plug is to be used by the source device.

Using the output-select button on the controller, the controller selects an output plug for a source device (e.g., an IEEE 1394 AV/C unit) based on, for example, the signal format, channel bandwidth, and channel number information provided by the source device in response to a query from the controller. In accordance with the present invention, the information pertaining

to which plugs can be used and the resources required is provided by the controller device interrogating the state variables for the source device.

With the output selected, the controller can then select another AV/C unit,
5 for example, using the input-select button to select a connection. Given the information of signal format and channel bandwidth provided in response to the controller's query, the target device can either provide a valid connection, or reject the connection for some reason. In the former case, the connection is quickly and readily established; in the latter case, the controller quickly and
10 readily determines that the connection is not possible. More target devices can be added as desired using the input-select button.

In summary, in accordance with the present invention, the amount of processing and memory required by the controller is reduced by extending
15 aspects of the connection process from the controller to the target (source and sink) devices.